NATURAL RESOURCES CONSERVATION SERVICE

CONSERVATION PRACTICE STANDARD

CONTOUR BUFFER STRIPS

(Acre)

CODE 332

DEFINITION

Narrow strips of permanent, herbaceous vegetative cover established across the slope and alternated down the slope with parallel, wider cropped strips.

PURPOSES

- To reduce sheet and rill erosion.
- To reduce transport of sediment and other water-borne contaminants downslope, on-site or off-site.
- To enhance wildlife habitat.

CONDITIONS WHERE PRACTICE APPLIES

This practice applies to cropland. It is most suitable on uniform slopes ranging from 4 to 8 percent with slope lengths less than the Critical Slope Length (Critical Slope Length = length of slope above which contouring looses its effectiveness).

The practice is more difficult to establish on undulating to rolling topography because of the difficulty of maintaining parallel strip boundaries across the hill slope or staying within row grade limits.

The narrow strips of permanent vegetative cover are not a part of the normal crop rotation.

This standard does not apply to situations where the width of the buffer strips will be equal to or exceed the width of the adjoining crop strips.

CRITERIA

Criteria Applicable to Both Reducing Sheet and Rill Erosion and Reducing Transport of Sediment and Water-Borne Contaminants.

a. Row Grade, Strip Width

The uphill edge of each strip in the system shall not exceed 2 percent off contour. The bottom edge of each strip shall be adjusted as needed to match equipment width for managing crops located below the strip. The narrowest point of the strip shall not be less than 15 feet for grass or grass-legume stands, and 30 feet when legumes are used alone.

b. Arrangement of Strips

Cropped strips shall be alternated with buffer strips down the hill slope. Spacing and width of crop strips shall be based on Practice Code 585, Contour Stripcropping.

When used in combination with graded terraces or diversion with underground outlets, or water and sediment control basins, the layout of buffer strips shall be consistent with the layout and spacing of the terraces. The buffer strip shall be located adjacent to the terrace on its up slope edge.

c. Vegetation

Buffer strips shall be established with permanent vegetation consisting of grasses, legumes, or grass-legume mixtures, adapted to the site, and tolerant of the anticipated depth of sediment deposition. No plants listed on the noxious weed list of the state will be established in a buffer strip cropping system.

The buffer strips shall have a Vegetative Cover-Management Condition of 1 (established

meadow - very dense cover) or 2 (1st year meadow or grass legume hay just before cutting) that provides protective cover and induces sediment deposition during periods when erosion is expected to occur on the cropped strips. Cropped strips will normally be expected to have a Cover-Management Condition within the range from 3 (heavy dense cover or very rough) through 7 (Clean tilled, smooth or fallow). (Cover Management Conditions are described in Chapter 6, Predicting Soil Erosion by Water, A Guide to Conservation Planning with the Revised Universal Soil Loss Equation "RUSLE")

The stem density for grass species shall be greater than 50, and for legumes, greater than 30 stems per square foot.

c. Level of Erosion control

The level of erosion control achieved by the buffer strip cropping practice shall meet or exceed the soil erosion level specified by the conservation plan objective. It shall be determined using the approved erosion prediction technology, accounting for the impact of other conservation practices in the system.

Additional Criteria to Enhance Wildlife Habitat

To enhance wildlife habitat, use native warm season grass species, recommended for wildlife purposes.

Delay mowing the buffer strips to every other year or every third year depending upon geographical location.

Mow only after the desired species of ground nesting birds have hatched. Allow for regrowth before the growing season ends.

To enhance wildlife cover, the width of buffer strips will be increased to 30 feet or wider as determined based on the requirements for nesting and escape cover of the target wildlife species.

The maximum width between buffer strips should not exceed 300 feet.

CONSIDERATIONS

Protect areas of existing or potential concentrated flow erosion by any one or more suitable conservation practices, such as grassed waterways, water and sediment control basins, or diversion terraces.

When the slope length exceeds the critical slope length for the cover-management condition that best characterizes the field to be contour buffer stripped, establish structures, such as terraces, to reduce the slope length below critical if the soil loss objective is not reached. (Design Guidance: Critical slope lengths can be increased by retaining crop residue on the soil surface of the cultivated strips using crop residue management practices. Certain tillage practices can also be used on the cultivated strips to increase random roughness to cause deposition to occur in depressions between soil clods. However, if the cropped strips are kept very rough, in high ridges, or under heavy residue cover, the need for contour buffer strips as an erosion and sediment reduction practice will be reduced since less sediment will be delivered to them.)

On fields where row crops are a part of the rotation, consider establishing field borders on headlands or end rows, which are steeper than the designed grade of rows in the cropped strip. Where contour row curvature becomes too sharp to keep equipment aligned with rows during field operations, consider increasing the buffer strip width to avoid sharp ridge points. In drainage ways, consider establishing grassed waterways at least to the point of sharp curvature. These strips should be wide enough to allow the equipment to be lifted and/or turned to meet the same rows across the turn strip.

Prior to design and layout, consider removing any obstructions or making changes in field boundaries or shape, where feasible, to improve the effectiveness of the practice and the ease of performing farming operations.

Prior to layout, inspect the field's position on the landscape to find key points for commencing layout or getting the width of one set of strips (one cultivated and one buffer) to pass by an obstruction or ridge saddle. Considering grade limits, whenever possible, run strip boundaries parallel with fence lines or other barriers. Account for uncropped access road widths when they must traverse the field by adjusting strip boundaries on either side accordingly.

Consider adding native forbs to the seeding mixture when they are available.

The standing residual cover provides early and late season nesting and escape cover for many species of wildlife displaced from other mowed areas.

PLANS AND SPECIFICATIONS

Specifications for installation, operation, and maintenance of Contour Buffer Strips shall be prepared for each field according to the Criteria, Considerations, and Operations and Maintenance described in this standard, and shall be recorded on specification sheets, job sheets, narrative statements in conservation plans, or other acceptable documentation.

OPERATION AND MAINTENANCE

Conduct all farming operations parallel to the strip boundaries except on headlands or end rows with gradients less than the criteria set forth in this standard.

Mow strips to maintain appropriate stand density. Mowing should occur after ground nesting birds have reached the flight stage.

Fertilize buffer strips as needed to maintain stand density.

Mow sod turn strips and waterways at least annually.

Spot seed or totally renovate buffer strip systems damaged by herbicide application after residual action of the herbicide is complete.

Redistribute sediment accumulations along the upslope edge of the buffer-crop strip interface upslope over the cultivated strip when needed to maintain uniform sheet flow along the buffer/cropped strip boundary. If sediment accumulates just below the upslope edge of the buffer strip to a depth of 6 inches or stem density falls below specified amounts in the buffer strip, relocate the buffer/cropped strip interface location. Cultivated strips and buffer strips shall be rotated so that a mature stand of protective cover is achieved in a newly established buffer strip immediately below or above the old buffer strip before removing the old buffer to plant an erosion-prone crop. Alternate repositioning of buffer strips to maintain their relative position on the hill slope.

Renovate vegetated headlands or end row area as needed to keep ground cover above 65 percent.